Dist-County-Route: 03-Sac-5
Post Mile Limits: 0.0/17.2
Type of Work: Pavement Rehabilitation
Project ID (EA): XXXXXX
Program Identification: 201.120
Phase: ☐ PID ☐ PA/ED ☒ PS&E

Regional Water Quality Control Board(s): Central Valley (Region 5)
Total Disturbed Soil Area: 1.5 Post Construction Treatment Area: 0.0
Alternative Compliance (acres):
Estimated Const. Start Date: 1/1/17 Estimated Const. Completion Date: 12/31/19
Risk Level: RL 1 ☐ RL 2 ☒ RL 3 ☐ WPCP ☐ Other:
Is the Project within a TMDL watershed? Yes ☒ No ☐
TMDL Compliance Units (acres): 0.5
Notification of ADL reuse (if yes, provide date): Yes ☐ Date: No ☒

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Betsy Ross — 10/08/16

Betsy Ross, Registered Project Engineer/Landscape Architect — Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

REGISTERED PROFESSIONAL ENGINEER
BETSY ROSS
No. CXXXXX
Exp. 6-30-18
CIVIL
STATE OF CALIFORNIA

George Washington — 10/08/16

George Washington, Project Manager — *Date*

Paul Revere — 10/08/16

Paul Revere, Designated Maintenance Representative — *Date*

Horatio Gates — 10/08/16

Horatio Gates, Designated Landscape Architect Representative — *Date*

Friedrich Wilhelm von Steuben — 10/08/16

Friedrich Wilhelm von Steuben, District/Regional Design SW Coordinator or Designee — *Date*

STORMWATER DATA INFORMATION

1. Project Description

This proposed roadway rehabilitation project is along Interstate 5 in Sacramento County from the San Joaquin County line (PM 0.0) to the Florin Road IC (PM 17.2). The project was divided into four segments based on the pavement rehabilitation strategy being utilized. Below is the outline of the proposed scope of work for each segment:

Segment 1 - PM 0.0 to PM 3.5

Pavement grinding, random slab replacement, and dowel bar retrofit.

Segment 2 - PM 3.5 to PM 13.0

Random slab replacements, crack and seat the existing PCC pavement and overlay with asphalt concrete.

Segment 3 – PM 13.0 to PM 15.7

Rehabilitate lanes #1 and 3 (grind, PCC slab replacement, overlay, new median pavement and new concrete barrier). Reconstruct and re-grade median to eliminate the need for a median ditch and place new median pavement and concrete median barrier for traffic safety purposes.

Segment 4 – PM 15.7 to PM 17.2

Random slab replacements, crack and seat the existing PCC pavement and overlay with hot mix asphalt.

This project cannot be considered routine maintenance because line, grade, and hydraulic capacity have been changed due to the increase in impervious area of the new median pavement and new concrete barrier in Segment 3.

In general construction projects that result in a land disturbance of equal to or greater than one acre are subject to California's Construction General Permit (CGP). The total disturbed soil area (DSA) for this project is expected to be 1.5 acres. Shoulder backing area in Segment 1 include 0.1 acres of DSA and in Segment 3 include 0.2 acres of DSA. Grading in Segment 3 will result in 0.8 acreas of DSA to accommodate the new median pavement and new concrete median barrier. Construction staging area in Segment 3 include 0.4 acres of DSA. Consequently, this project will seek coverage under the CGP.

The estimated existing impervious area is 150 acres, and post project impervious area 150.8 acres. The difference in before and after project impervious area is the net new impervious (NNI) and equal to 0.8 acres, resulting from median paving and new concrete median barrier in Segment 3. No replaced impervious surface (RIS) is anticipated as pervious subgrade will not be exposed during construction when replacing the pavement.

The new impervious surface (NIS) is the combination of NNI and RIS. NIS equals 0.8 acres.

There are no additional treated areas (ATA) for this project. ATA #1 is any existing Treatment BMP removed, or modified (contributing drainage area reduced) by the project. ATA #2 is when NNI for the project is greater than 50 percent of the total post-project impervious area and the entire impervious area is included in the post construction treatment area (PCTA). When the NNI is less than or equal to 50 percent of the total post-project impervious area, no additional impervious area is required to be treated. The percentage of NNI to the total post-project impervious area is less than 50% for this project.
One existing TBMP has been identified within the project limits and its contributing drainage area will treat an additional 0.5 acres of pavement. Refer to Section 6. Alternative Compliance credits of 0.5 acres for this watershed can be applied.

The PCTA is the combination of NIS and ATA. Since PCTA is less than 1 acre no treatment BMPs are required.

Table 1-1 DSA and PCTA Totals.

Seg	DSA (acres)	Existing Impervious Area, acres	Post Impervious Area, acres	Net New Impervious Surface (NNI), acres	Replaced Impervious Surface (RIS), acres	New Impervious Surface (NIS), acres	ATA #1, acres	ATA #2, acres	PCTA, acres
1	0.1	30	30	0	0	0	0	0	0
2	0	83	83	0	0	0	0	0	0
3	1.4	24	24.8	0.8	0	0.8	0	0	0
4	0	13	13	0	0	0	0	0	0
Total	1.5	150	150.8	0.8	0	0.8	0	0	0

This project is entirely within the City and County of Sacramento Municipal Separate Storm Sewer System (MS4) permit area.

2. Site Data and Stormwater Quality Design Issues

The Central Valley Regional Water Quality Control Board (CVRWQCB) has jurisdiction within the project limits.

A 401 Water Quality Certification is not required.

Hydrologic Units

The project area is located in three hydrologic sub-areas of the Sacramento Delta HU: undefined (510.0), Franklin (519.11), and undefined (544).

Receiving Water Bodies

The direct receiving water bodies are Morrison Creek and the Mokelumne River at the northern and southern ends of the project. The Mokelumne River is devined as Delta Waterways (eastern portion) where the project discharges. In between, project runoff is conveyed in a series of roadway drainage channels that eventually discharge to unnamed streams, most of which ultimately discharge to the

eastern portion of the Sacramento-San Joaquin Rivers' Delta. A small portion of the flow is directed to the City of Sacramento's Sump 90, located west of I-5 and Morrison Creek, where it is pumped through the levee and into the Sacramento River. This stretch of the Sacramento River, however, is downstream of the I Street Bridge in downtown Sacramento, which is defined as being part of the Delta in the CVRWQCB's Basin Plan for Region 5.

List of 303(d) Impaired Receiving Water Bodies and Pollutants

(Based on RWQCBs Final 2012 CA Integrated Report)

Caltrans WQPT was used to determine the information in this section.

Delta Waterways (northern portion)

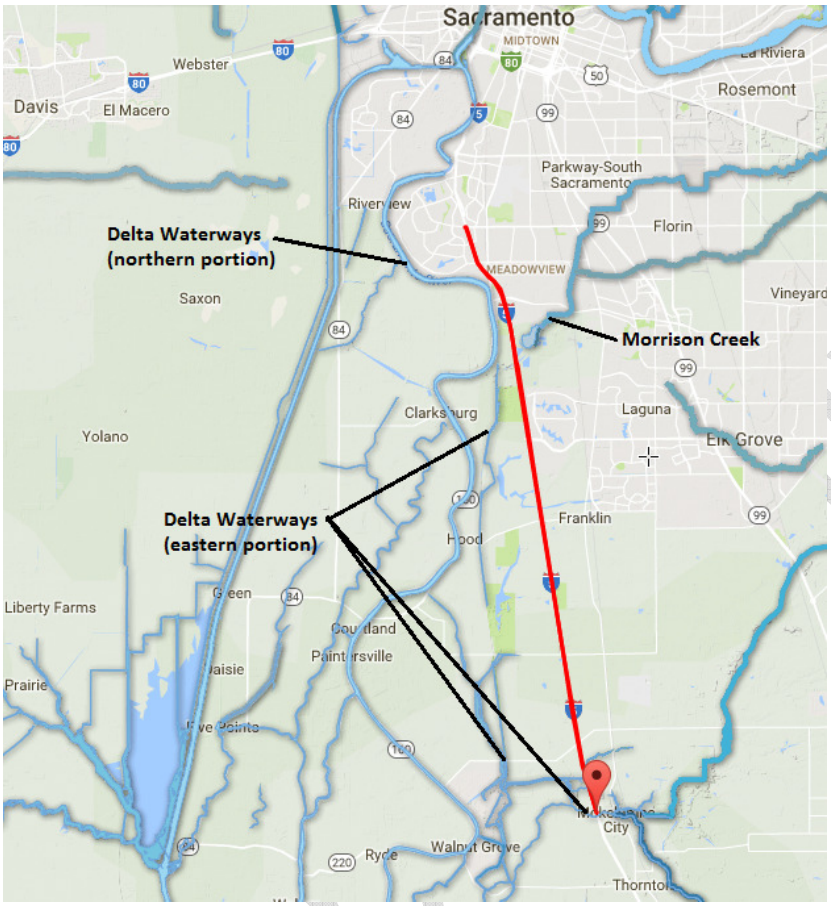
Pollutant
Chlordane
Chlorpyrifos
DDT (Dichlorodiphenyltrichloroethane)
Diazinon
Dieldrin
Group A Pesticides
Invasive Species
Mercury
PCBs (Polychlorinated biphenyls)
Unknown Toxicity

Delta Waterways (eastern portion)

Pollutant
Chlorpyrifos
DDT (Dichlorodiphenyltrichloroethane)
Diazinon
Group A Pesticides
Invasive Species
Mercury
Unknown Toxicity

Morrison Creek

Pollutant
Pentachlorophenol (PCP)
Pyrethroids
Sediment Toxicity
Diazinon



303(d) Listed Waterbodies near Project

Project TMDLs–TMDLs listed in Attachment IV of Caltrans NPDES Permit (ORDER 2012-0011-DWQ)

Caltrans Portal was used to determine the information in this section.

Caltrans Adopted TMDLs in Project Limits	Pollutant	District	County	Route	Post Mile (PM)	
					To	From
Sacramento - San Joaquin River Delta Estuary	Methyl mercury	3	Sac	5	0.0	5.9
Sacramento - San Joaquin River Delta Estuary	Methyl mercury	3	Sac	5	10.7	17.2

Climate

The climate is mild with temperatures ranging from lows in the upper 30s in January to highs in the low 90s in July. The rainy season has been defined by Caltrans as October 15 to April 15. The average monthly precipitation ranges from 0.04 inches in July to 3.74 inches in January. Rainfall

intensities based on the Sacramento City Rain Gauge are 0.73 inches/hour for a 10-year return and 1.03 inches/hour for a 100-year return period.

Topography

Based on aerial and street view photos, the terrain is generally flat with small variations in elevation at bridges. The United States Geological Survey (USGS) topographic maps identify the elevations ranging from sea level to 10 feet with no hills or mountains within the project area.

Soil Characteristics

The Natural Resources Conservation Service (NRCS) identifies the soils in the project vicinity as mainly Hydrologic Soil Group (HSG) D with a few areas of HSG C. Preliminary geotechnical studies have determined that over 85 percent of the highway along this corridor is on either cut or fill soils. Fill slopes associated with the construction of this project that will be made as flat as possible, not exceeding 4:1 (H:V). Detailed soil characterization will be provided once geotechnical studies for the project have been completed.

Groundwater Information

A review of historic Log of Test Borings for the Hood/Franklin Road overcrossing (O.C.)., Elk Grove Boulevard O.C., Beach Lake Bridge, Route 51160 S.O.H., and Florin Road O.C. show the groundwater to be from 6.0 feet to 32.5 feet below original grade.

Erosion Potential

The Caltrans Water Quality Planning Tool (WQPT) was used to estimate the erodibility of the site. The erosion factor K within the project area ranges from 0.24 to 0.37, with a weighted average of 0.29.

Measures for Avoiding or Reducing Potential Storm Water Impacts

Land Use

Between PM 0.0 and 9.4, the existing land is primarily agricultural. From PM 9.4 to 15.0, land use remains primarily agricultural on the west side of I-5, with some residential development on the east side. Beyond PM 15.0, land use consists of a mix of residential and commercial development as I-5 enters the metropolitan Sacramento area.

Right-of-Way Requirements

All work and BMPs will be within Caltrans R/W.

3. Construction Site BMPs to be used on Project

The Construction Site BMPs (PPDG F.3.2) are included in the Construction BMP Estimate below.

Construction BMP Estimate (for Caltrans use only) (at PS&E only)

SS/SSP	ITEM CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE[1]	AMOUNT[1]
13-3	130300	Prepare SWPPP	LS	1	$32,300	$32,300
13-2	130200	Prepare WPCP	LS	0	$0	$0
13-3.01	130310	Rain Event Action Plan (REAP)	EA	19	$500	$9,500
13-3.01	130330	Stormwater Annual Report	EA	4	$2,000	$8,000
13-3.01	130320	Stormwater Sampling and Analysis Day	EA	29	$0	$0
13-4	130100	Job Site Management	LS	1	$64,000	$64,000
		Tracking Controls				
13-7.03D	130730	Street Sweeping	LS	1	$9,900	$9,900
13-7.01	130710	Temporary Construction Entrance/Exit	EA	6	$2,500	$15,000
		Sediment Control/Perimeter Control				
13-6.03E	130640	Temporary Fiber Roll (6")	FT	5,000	$4	$20,000
13-6.03G	130660	Temporary Large Sediment Barrier (18-22" Fiber Roll)	FT	0	$0	$0
13-6.03I	130680	Temporary Silt Fence	FT	3,000	$3	$9,000
13-6.03H	130670	Temporary Reinforced Silt Fence	FT	0	$0	$0
13-6.03B	130610	Temporary Check Dam	LF	0	$0	$0
13-6.03F	130650	Temporary Gravel Bag Berm	LF	1,500	$4	$6,000
13-6.03C	130620	Temporary Drainage Inlet Protection	EA	64	$200	$12,800
		Non-Stormwater				
13-9.01	130900	Temporary Concrete Washout - Portable	LS	1	9,000	$9,000
		Temporary Soil Stabilization				
13-5.01	130505	Move-in/Move-out (Temporary Erosion Control)	EA	6	$100	$600
13-5.03E	130530	Temporary Hydraulic Mulch (Bonded Fiber Matrix)	SQ YDS	2,230	$1	$2,230
		Temporary Hydraulic Mulch (Mechanically Stabilized Fiber Matrix)	SQ YDS	0	$0	$0
13-5.03D	130520	Temporary Hydraulic Mulch	SQ YDS	0	$0	$0
13-5.03H	130540	Temporary Tacked Straw	SQ YDS	0	$0	$0
13-5.03J	130560	Temporary Soil Binder	SQ YDS	0	$0	$0
13-5.03C	130510	Temporary Mulch	SQ YDS	0	$0	$0
13-5.03B	130500	Temporary Erosion Control Blanket	SQ YDS	0	$0	$0
13-502.F	130570	Temporary Cover	SQ YDS	2,230	$9	$20,070
		Supplemental Items				
	066596	Additional Water Pollution Control	LS	1	$1,100	$1,100
	066595	Water Pollution Control Maintenance Sharing	LS	0	$0	$0
	066597	Stormwater Sampling and Analysis	LS	1	$19,800	$19,800
	066916	Construction General Permit Fees	LS	1	$4,496	$4,496
					Total =	**$243,796**

1. - No Time Related Overhead should be included in the Unit Price or Amount	Estimated Project Cost =	$12,000,000
2. - Use the PPDG Table F-2 to show the percentage of cost allocated for Stormwater BMP's	Percent Allocated[2] (PPDG) =	1.50%
3. - This reflects the amount that would be estimated if the PPDG planning level formula was used.	Planning Estimate[3] =	$180,000.00
4. - Percentage of the Estimated Project Cost allocated for CBMPs	CBMPs Percentage of Project Estimate [4] =	2.0%

Risk Assessment

This project was determined to be Risk Level 2 based on Method 1, GIS Map Method, Appendix 1, 2009 CGP. Although the GIS map shows only portions of the project as having a high receiving water risk, Chris Allen, the District Storm Water Coordinator, confirmed on October 5, 2016 that the project team should treat the entire project as having a high receiving water risk.

Construction Site BMP Strategy

The construction work for this project is scheduled to cover three years.

DSAs will be protected in accordance with the project's approved SWPPP. Erosion control BMPs such as temporary hydraulic mulch will be placed when staging requires the protection of newly

graded slopes. Temporary cover will be placed for quick and short-term stabilization of DSAs in preparation for an approaching storm or in the interim between staged soil disturbances.

Sediment control measures such as temporary silt fences will minimize sediment-laden sheet flows from discharging off-site. Temporary fiber rolls will also be utilized where necessary as a sediment control measure to intercept sheet and concentrated flow runoff and minimize the run-on upslope of the project. Temporary drainage inlet protection will be utilized to prevent sediment from entering the current or proposed storm drains.

The project will involve the movement of dirt, by construction equipment, adjacent to public roadways. In order to prevent the tracking of mud and dirt off-site, stabilized construction entrances/exits will be placed at multiple points throughout the project area. Street sweeping will also be utilized to remove tracked sediment.

Concrete wastes shall be managed through the use of concrete washout facilities.

Various waste management, materials handling, and other housekeeping items shall be used throughout the duration of the project. Stockpiles of various kinds are anticipated and shall be maintained with the appropriate BMPs. Move-in and move-out for temporary erosion control per Caltrans 2015 Standard Specifications, Section 13-5.01 will be utilized.

A meeting with Jake Luby, Caltrans Construction Storm Water Coordinator was held on September 30. The Construction unit concurs with the Construction Site BMP strategy and development for this stage of the project.

4. Maintenance BMPs

Drain inlet stenciling is not required because pedestrian traffic is prohibited within the project limits.

The project design allows for the ease of maintaining all best management practices (BMPs).

5. Other Water Quality Requirements and Agreements

There are no negotiated agreements with the Central Valley Regional Water Quality Control Board concerning this project.

6. Permanent BMPs

Final soil stabilization for the 0.4 acres of construction staging will be achieved through placing gravel to provide a long-term, non-degradable cover material. Upon project completion, the site is not expected to pose any additional sediment discharge risk than it did prior to the commencement of construction activity.

Rapid Stream Assessment (RSA)

This project does not require an RSA based on using the algorithm (items 1-4 below) provided in Section 2 of Caltrans Hydromodification Guidance dated February 2015. No RSA is required based on item 2.

1. This project includes stream crossings.
2. This project does not include 1 acre or more of net new impervious (NNI) surface.
3. The NNI is within the stream threshold drainage areas.
4. Stream crossings are "Water of the US" as defined by Army Corps of Engineers latest guidance on determination of jurisdiction for CWA section 404.

Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

The proposed improvements will increase the impervious area within the project limits. Drainage design calculations have determined that this increase has a negligible impact on downstream flow. Onsite drainage will change however runoff will be conveyed to the same outfall locations.

Segments 1 and 2 will not change velocity or volume of downstream flows because the work in these areas involves only roadway rehabilitation and creates no new impervious area.

Segments 3 and 4 will not increase the velocity and volume of downstream flows, but will slightly modify the local drainage along the roadway. Currently, stormwater from the traveled way in these areas sheet flows to the outside shoulders and into roadside ditches. The median areas outside the traveled way drain to inlets along the median and discharge to the same roadside ditches. To allow for proper staging, the median areas for segments 3 and 4 will be overlaid or reconstructed to conform to the traveled way elevations and allow for stormwater from the median to sheet flow to the outside shoulders. While the direction of flow along the median will be modified, it does not change the overall drainage watershed because all flows from the roadway (traveled way and median) still combine at the roadside ditches.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

There are minimal slope stabilization concerns because most of the work proposed for this project will be contained with the existing roadway footprint, and the slopes are mild. All DSAs will consist of median re-grading areas, where both the proposed and existing surfaces will have slopes of less than 10 percent.

Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

For segments 1 and 2, the drainage pattern will not be altered. Runoff along the traveled way will continue to sheet flow to the outside shoulders. The median area drainage will remain the same as the existing condition, with flow from median drain inlets periodically conveyed through culverts to the roadside drainage ditches and channels (PM 0.0 to PM 13.0, south of Morrison Creek). For segments 3 and 4, from north of Morrison Creek to the end of the project limits, the drainage pattern will be altered. The median will be reconstructed to allow for sheet flow across the traveled way to the edge of shoulder, and the median drainage inlets will be capped and abandoned.

This project will cap and abandon existing drainage inlets. Existing cross drains that no longer receive runoff will also be abandoned. Detailed calculations documenting the changes in ditch flows and velocities can be found in the Drainage Report. The small changes of flow does not result in any velocities greater than 4 feet per second, and the existing roadside ditches are able to convey flows with adequate freeboard per section 860 of the Highway Design Manual.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

Existing vegetation is preserved to the maximum extent practicable. The project involves minimum clearing and grubbing because the majority of the project is currently paved. In some locations, an approximately 5 foot wide swath is re-graded with shoulder backing at 4:1 (H:V) or shallower for newly placed asphalt concrete overlay. These areas do not contain any environmentally sensitive areas.

Treatment BMP Strategy

This project is not required to consider treatment BMPs because the Post Construction Treatment Area is less than 1 acre.

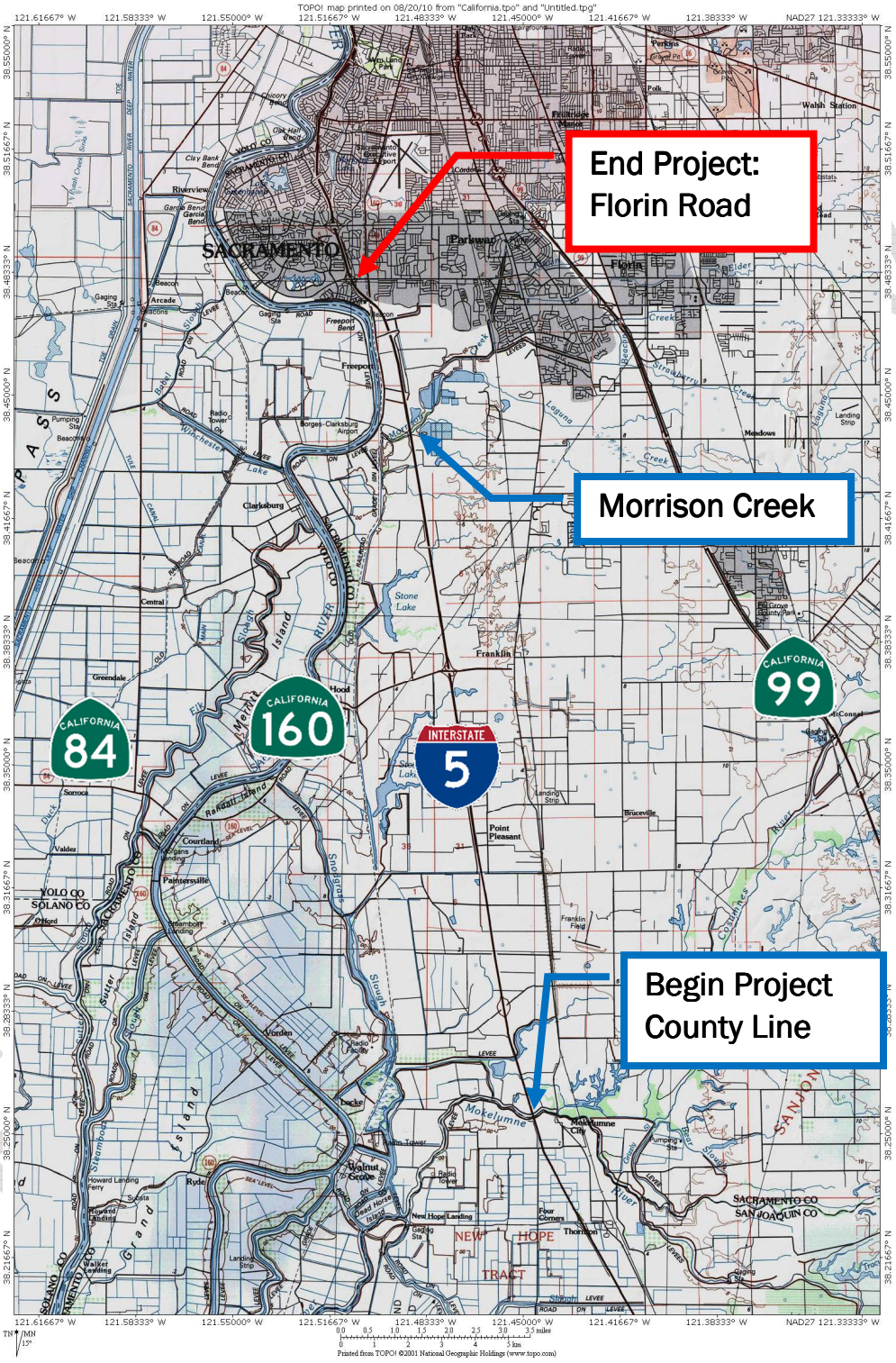
The following existing treatment BMP is present within the project limits and treats an additional 0.50 acres of pavement runoff from its pre-project impervious contributing drainage area. An additional 0.07 cfs of Water Quality Flow is treated. The existing footprint of the BMP has not changed and no additional costs incurred. Calculations confirm that the existing Biofiltration BMP has the capacity to treat the additional pavement runoff. The Regional/District NPDES Stormwater Coordinator confirmed at the PDT meeting held in September 2016 that Compliance Units will be credited 0.50 acres.

IMMS							
ID	County	Rte	PM	Loc1	Loc2	BMP Type	Description
SWSAC005-S017110	SAC	5	17.11	S		BIOSWL	BIOFILTRATION-BIO-SWALE

Required Attachments

- Vicinity Map
- Evaluation Documentation Form (EDF)
- Risk Level Determination Documentation
- SWDR Attachment for SMARTS Input
- SWDR Summary Spreadsheets

Vicinity Map



Source: United States Geological Survey (USGS)

Evaluation Documentation Form

DATE: 10-08-16

Project ID (EA): XXXXX

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Treatment BMPs. Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance or TMDL Compliance Units)?		✓	If **Yes**, go to 8. If **No**, continue to 3.
3.	Is there a direct or indirect discharge to surface waters?	✓		If **Yes**, continue to 4. If **No**, go to 9.
4.	As defined in the WQAR or ED, does the project: a. discharge to areas of Special Biological Significance (ASBS), or		✓	If **Yes to any**, contact the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to discuss the Department's obligations, go to 8 or 5. FWS *(Dist./Reg. Coordinator initials)* If **No** to all, continue to 5.
	b. discharge to a TMDL watershed where Caltrans is named stakeholder, or	✓		
	c. have other pollution control requirements for surface waters within the project limits?		✓	
5.	Are any existing Treatment BMPs partially or completely removed? (ATA condition #1, Section 4.4.1)		✓	If **Yes**, go to 8 **AND** continue to 6. If **No**, continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If **Yes**, go to 9. If **No**, continue to 7.
7.	Does the project result in an increase of one acre or more of new impervious surface (NIS)?		✓	If **Yes**, go to 8. If **No**, go to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1.		
9.	Project is not required to implement Treatment BMPs. FWS *(Dist./Reg. Design SW Coord. Initials)* BR *(Project Engineer Initials)* 10/08/16 *(Date)*	Document for Project Files by completing this form and attaching it to the SWDR.		

Figure 1 . R Factor (Value=127)

Facility Information

- Start Date: 01/01/2017
- End Date: 12/31/2019
- Latitude: 38.3754
- Longitude: -121.4756

Erosivity Index Calculator Results

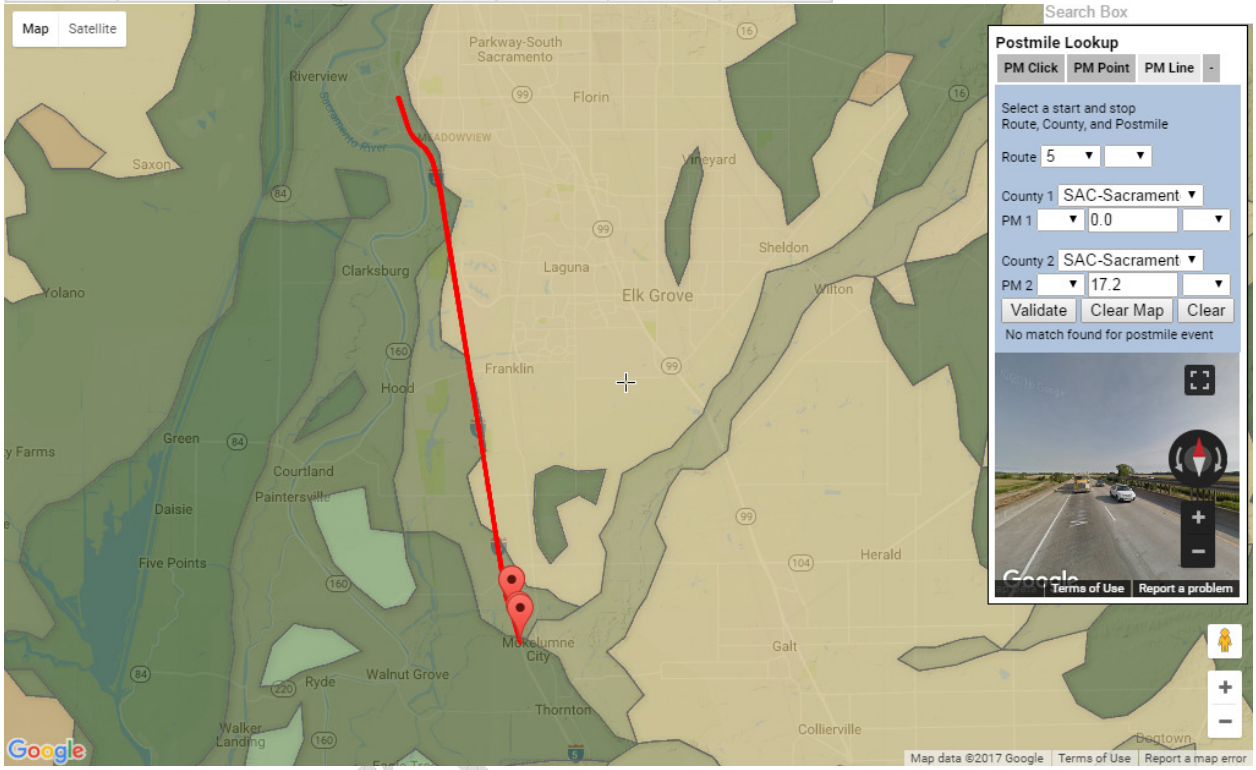
An erosivity index value Of **127** has been determined for the construction period of **01/01/2017 - 12/31/2019**.

A rainfall erosivity factor of 5.0 or greater has been calculated for your site and period of construction. **You do NOT qualify for a waiver from NPDES permitting requirements.**

Source: < https://www.epa.gov/npdes/rainfall-erosivity-factor-calculator-small-construction-sites>

Figure 2 . K Factor from GIS Map (Value=0.29)

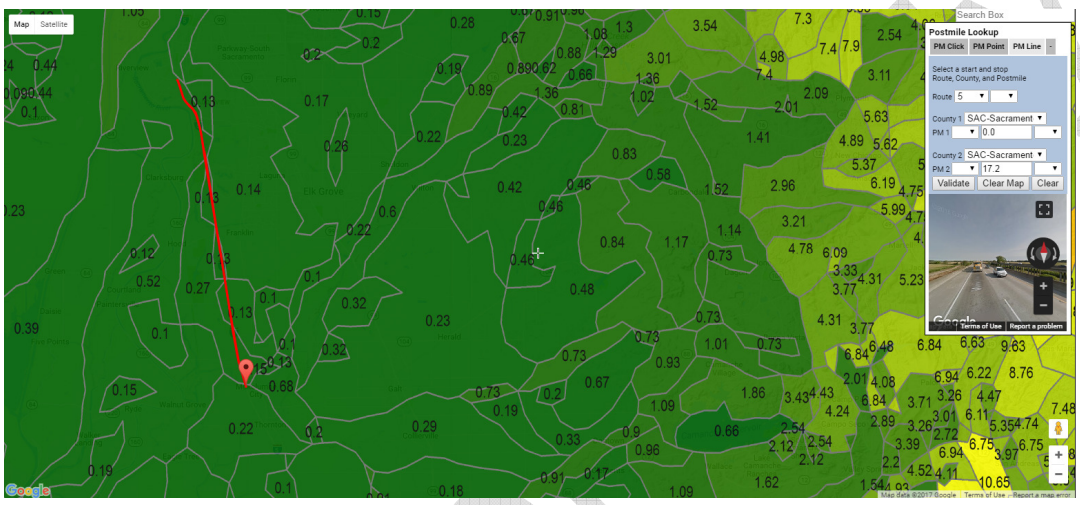
	KxL	k	Total Length			
	6624	0.24	27600			
	10052	0.28	35900		17.2	mi
	10119.5	0.37	27350		90816	ft
	26795.5		90850	ft		
∑kL / ∑L =	0.29					



Source: Caltrans WQPT

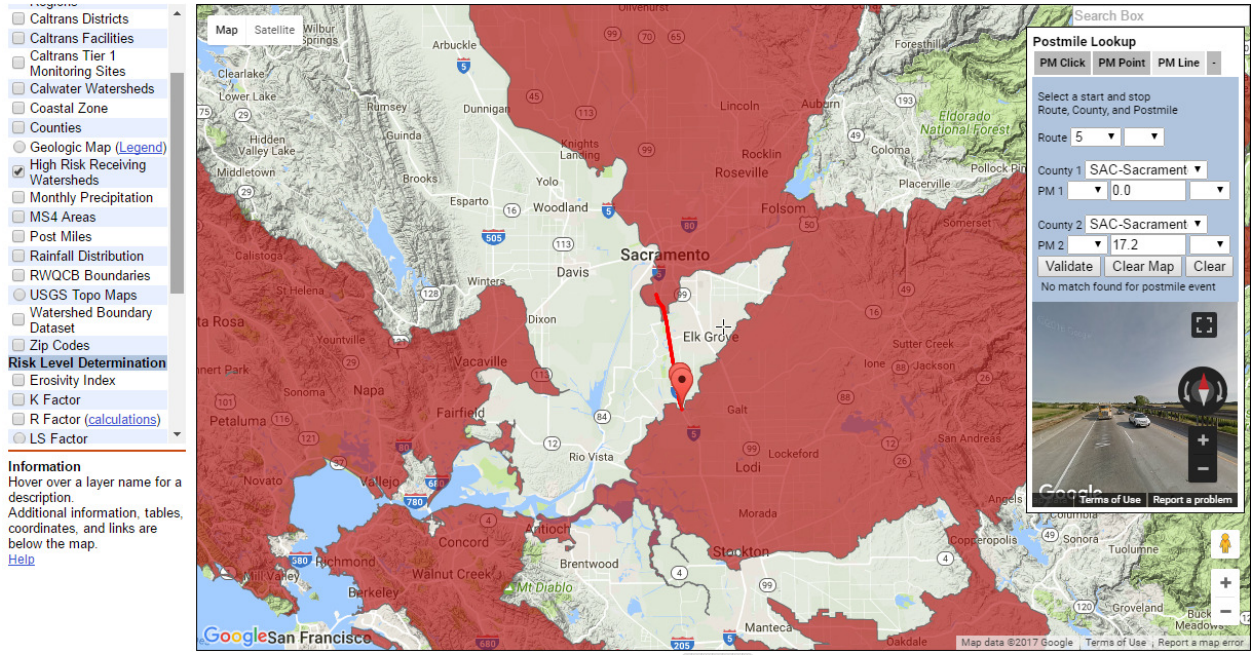
Figure 3 . LS Factor from GIS Map (Value=0.27)

	LSxL	LS			Total Length			
	6084	0.13	46500		46800			
	4941	0.27	21000		18300		17.2	mi
	13364	0.52	25700		25700		90816	ft
	24389				90800	ft		
∑LSxL / ∑L	0.27							



Source: Caltrans WQPT

Figure 4: Receiving Water Risk GIS Map

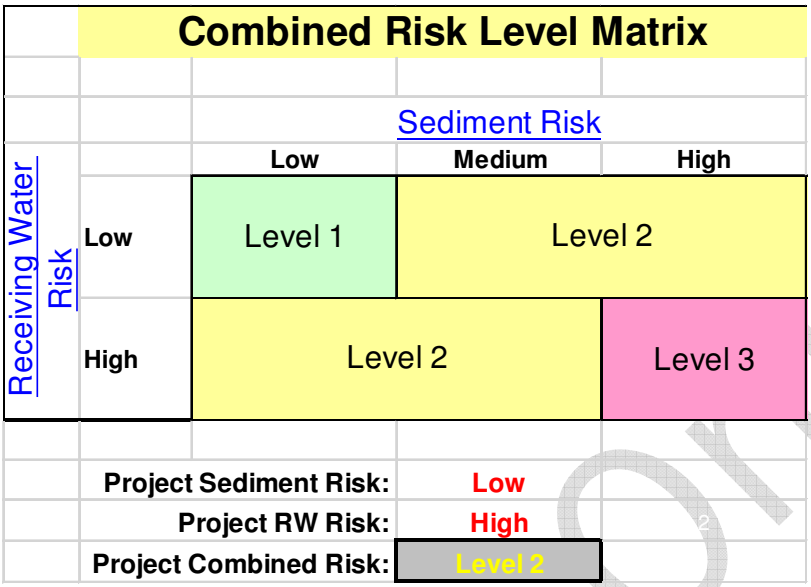


Source: Caltrans

Figure 5 . Sediment Risk Factor Worksheet

Sediment Risk Factor Worksheet	Entry
A) R Factor	
Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.	
http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm	
R Factor Value	127
B) K Factor (weighted average, by area, for all site soils)	
The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.	
Site-specific K factor guidance	
K Factor Value	0.29
C) LS Factor (weighted average, by area, for all slopes)	
The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.	
LS Table	
LS Factor Value	0.27
Watershed Erosion Estimate (=RxKxLS) in tons/acre	9.9441
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >=15 and <75 tons/acre High Sediment Risk: >= 75 tons/acre	**Low**

Figure 6 . Risk Level Determination (Value=Risk Level 2)



Source: State Water Resources Control Board

SWDR Attachment for SMARTS Input

DESIGN INFORMATION FOR CONSTRUCTION

The following information is based on the PS&E design plans and specifications. If contract amendments or change orders are made after the design is complete, then the information should be updated by construction, as appropriate.

Project ID (EA): XXXXXX

Enter the following data into the CGP SMARTS Notice of Intent-Site Information page.

1. **Total site size** (acres); for project area use Caltrans RW x post mile limits (begin-end) on plan sheets.

Total site size 448 acres

2. Enter **latitude and longitude** in decimal degrees to 5 significant figures. Use a location from the center of the project. This information can be obtained from Survey information, GPS units, Google earth, CT Earth, or other mapping software.

Latitude: 38.37693

Longitude: -121.47714

3. **Total Area to be Disturbed** (total Disturbed Soil Area (DSA)): This information is already calculated and can be taken from SWDR Section 1. It should be described in acres.

DSA 1.5 acres

4. **Imperviousness before Construction (percentage)** - This is calculated as the total impervious area of the project area divided by the total project area (see total site size), multiplied by 100. The impervious area is all paved areas or hard surfaces within the project limits.

Impervious area before construction % 33

5. **Percent of total disturbed (percentage)**; This should be calculated by dividing the total disturbed soil area by the total project area and multiply by 100.

Percent of Total disturbed area % 0.3

6. **Imperviousness after Construction (percentage)**, This should be calculated by adding all impervious area paved and hard surfaces based on the final design within project limits from above and dividing by the total project area from above multiply by 100.

Impervious area after construction % 34

7. **Mile Post Marker**, enter the approximate post mile at the center of the project or take the average of the "begin" and "end" post mile markers from the title sheet.
Mile post Marker 8.6

8. **Is the construction site part of a larger common plan of development**? Yes or No; in most cases mark no for Caltrans projects, as this is intended for developers (in accordance with the EPA definitions referenced by the CGP in 40 CFR title 22). This clarification is based on direction from the State Board. Get a confirmation with the Design Stormwater coordinator to determine if there is a special case project where the "common plan of development" may apply. No X

9. **Name of development**. Mark "Not Applicable (N/A)" in most cases.

Name of plan or development: N/A

10. **Estimated Construction Commencement Date**, mm/dd/yyyy. The PE provides the estimated construction start date from the cover of the SWDR. The actual construction start date should be used to input into SMARTS. After the contract is awarded, the RE will use an updated start date (if different) when entering in SMARTS. The RE needs to be aware of the original date provided by Design, as this date was used to calculate the design information including the Risk Level Determination. If the actual start date is different, construction should coordinate with the PE to determine if the Risk Level has changed.

Estimated Construction Commencement Date, 01/01/2017.

11. **Estimated Complete Grading Date/Complete Project Date**; The PE provides the estimated construction completion date from the cover of the SWDR to be used for both of these inputs. After the contract is awarded, the RE will use an updated completion date (if different) when entering in SMARTS. The RE needs to be aware of the original completion date provided by Design, as this date was used to calculate the design information including the Risk Level Determination. If the completion date is different, construction should coordinate with the PE to determine if the Risk Level has changed.

Estimated Complete Grading Date/Complete Project: 12/31/2019. Use the same date for both inputs, unless instructed otherwise.

12. **Does the Stormwater from the construction site discharge directly or indirectly into waters of the United States.**

Indirect discharge (Y) - If yes, list name(s) of receiving water(s) Delta (northern an eastern portions)

Direct discharge (Y) - If yes, list name(s) of receiving water(s) Morrison Creek and the Mokelumne River

13. **Risk Level**; the combined project risk level is calculated using the sediment risk factor and the water body risk factor to give one overall project risk level. Use the Caltrans risk level determination guidance, (see the Stormwater design web page). Attach all risk calculations.

R factor value _127_____

K factor value_0.29_____

LS factor value_0.27_____

Receiving water risk comes from the state water resources control board mapping of water bodies for 303-d listing or TMDLs for sediment or water body with the beneficial use of cold and spawn and migratory. The input will either be high= yes and low=no;

Receiving water risk_yes_____, (yes or no)

The dates used for determining the project risk level and other design elements of the project required for CGP compliance are dependent on having the same sediment risk factor. This is a critical element for compliance, as modifying the estimated construction dates may cause the sediment risk factor to change and ultimately modify the overall project risk factor. This could impact the projects CGP compliance requirements and the assumptions used for the design documents and engineers estimate.

14. Provide electronic copy of plan sheets in .pdf format that can be loaded to SMARTS, burn a CD for the RE to use for the project. The Title sheet can be used as the site map.

15. Methodology for obtaining the CGP NOT decided by the PDT, see SWDR Section 6 text for methodology text and computational proof as appropriate, circle one. See SWRCB bulletin for details: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/bulletin_2013_1.pdf

a. 70% final cover method: Attach photo documentation _____X_____

b. RUSLE II: Attach computational proof and photo documentation _____

c. Other custom method if coordinated with local regional board, attach photo documentation or other proof as necessary.

SWDR Summary Spreadsheets

SWDR

SWDR Signed Date	District	EA/Project ID	County	Route	Beg_PM	End_PM	Project Description	Project Phase	Long SWDR	Risk Level	DSA (ac)	TMDL Waterbody
10/8/2016	3	XXXXXX	SAC	5	0.00	17.20	Pavement Rehabilitation	PS&E	Yes	RL2	1.5	Yes

Biofiltration Strips and Swales	Detention	Infiltration Devices	GSRD	TST	MedFilter	DPPIA	SA	Other BMP	Est. Const_Start	Est. Const _Comp	SW Comment
0	0	0	0	0	0	0	0	0	1/1/2017	12/31/2019	

Post Const Treatment Area (ac)	Treated Impervious Area (ac)	Treated Impervious Area Balance (ac)	Treated Pervious Area (ac)	Stabilized Area (ac)	MWELO	RSA
0.00	0.00	**0.00**	0.00	0.00	No	No